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EXAMINER

BURCH, MELODY M

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3683

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Please find below and/or attached an Office communication concerning this application or proceeding.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 4, 6, 11, 13, 15, 18, 19, 24, 28, 31, 38, and 43-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 3497037 to Deibel.

Re: claims 1, 2, 16, 19, 28, 29, and 43-45. Deibel shows in figure 4 a support assembly 140,145 for supporting a s cam 118,119,128, the s cam being an intermediary device between a brake actuator 122 and a set of wheel brakes 112 shown in figure 1 and is generally an elongate shank 128 having an s head 118 at a first end of the shank and a set of splines 155 at the second end of the shank, the s head having at least one arm shown in figures 1 and 2 for engaging a respective brake shoe 112, whereby rotation of the s cam in a first direction causes the at least one arm of the s head to act on the brake shoe to frictionally engage the brake shoe with a brake drum 102 shown in figure 1, the brake drum being affixed to a wheel connected to element 102 comprising a single bushing 145 rotationally supporting the s cam.

Deibel is silent as to the material of the shank and does not show the single bushing being elongate.

Due to the lack of criticality associated with the limitation of the shank being

Art Unit: 3683

metal, Examiner notes that it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416. Therefore, it is maintained that It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the shank of the s cam to have been made of metal in order to provide a shank with high structural integrity.

With regards to the bushing being elongate, in In re Rinehart 531 F.2d 1048, 189 USPQ 143 (CCPA 1976) the court held that “mere scaling up of a prior art process (or in this case an object) capable of being scaled up, if such were the case, would not establish patentability in a claim to an old process (object) so scaled”. Examiner notes that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have increased the length of the single bushing of Deibel to be elongate in order to provide a means of rotationally supporting a longer portion of the shank.

Re: claims 4, 18, and 31. Due to the lack of criticality associated with the limitation of the bushing being formed of a plastic material, Examiner notes that it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416. Therefore, it is maintained that It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the bushing to have been made of a plastic material in order to provide a lightweight but durable bushing structure.

Re: claims 6 and 15. Deibel shows in figure 4 the bushing being substantially enclosed within a bushing holder 140.

Re: claim 11, 24, and 38. Deibel shows in figure 4 the bushing being substantially sealed within a bushing holder by first 146 and second 148 seal members disposed at first and second ends of the bushing respectively, each of the seal members forming a sealing interface with the bushing holder and the s cam shank. Claim language does not disclose that each of the seals is disposed directly adjacent an end of the bushing.

Re: claim 13. Deibel shows in figure 4 the s cam shank outside margin being spaced apart from an inside margin of the bushing. Examiner notes that there is inherently a narrow clearance between the bushing and the shank to allow rotation of the shank.

3. Claims 1, 3, 4, 6, 7, 15, 17-20, 28, 30, 31, 33, 34, 39, 41, and 43-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6240806 to Morris et al. in view of US Patent 2382554 to Eksbergian et al.

Re: claims 1-3, 6, 15, 17, 19, 28, 30-30, 33, and 43-45. Morris et al. show in figure 4 a support assembly 54,59,60 for supporting a s cam 53,52 the s cam being an intermediary device between a brake actuator 18 and a set of wheel brakes disclosed in col. 1 lines 15-16 cooperating with element 53 and is generally an elongate shank 52 having an s head 53 at a first end of the shank and a set of splines 64 at the second end of the shank, the s head having at least one arm shown in figure 2 for engaging a respective brake shoe, whereby rotation of the s cam in a first direction causes the at

least one arm of the s head to act on the brake shoe to frictionally engage the brake shoe with a brake drum as disclosed in col. 1 lines 15-16, the brake drum being affixed to a wheel implicitly described by the disclosure in col. 1 lines 15-16 and col. 4 lines 42-43 comprising a bushing assembly rotationally supporting the s cam. (bushing holder is element 54.)

Morris et al. fail to disclose that the bushing assembly comprises a single bushing and are silent as to the material of the shank.

Eksergian et al. teach on pg. 2 line 73 – pg. 3 line 2 the use of a single elongate bearing to replace two spaced apart bearings.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the two spaced apart bushings of Morris et al. to have included a single elongate bushing, in view of the teachings of Eksergian, in order to facilitate assembly by having less parts.

Due to the lack of criticality associated with the limitation of the shank being metal, Examiner notes that it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416. Therefore, it is maintained that It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the shank of the s cam to have been made of metal in order to provide a shank with high structural integrity.

Also with regards to the bushing being unitary, in In re Larson, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965) the court held that the use of a one piece

construction instead of several parts rigidly secured together would be merely a matter of obvious engineering choice.

Re: claims 4, 18, and 31. Due to the lack of criticality associated with the limitation of the bushing being formed of a plastic material, Examiner notes that it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416. Therefore, it is maintained that It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the bushing to have been made of a plastic material in order to provide a lightweight but durable bushing structure.

Re: claims 7, 20, and 34. Morris et al., as modified, teach in figure 4 of Morris et al. the bushing holder having at least one grease fitting 72 disposed in a bore defined through a bushing holder body.

Re: claim 39. Morris et al., as modified, teach in figure 4 of Morris et al. including forming a sealing interface with the bushing holder and the s cam shank in the area of element 63.

Re: claim 41. Morris et al. teach in figure 4 of Morris et al: the s cam shank outside margin being spaced apart from an inside margin of the bushing. Examiner notes that there is inherently a narrow clearance between the bushing and the shank to allow rotation of the shank.

4. Claims 12, 14, 25, 26, 27, 40, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deibel in view of 4346535 to Asano et al.

Art Unit: 3683

Re: claims 12, 25, and 40. Deibel shows in figure 4 the s cam shank outside margin having a certain outside diameter.

Deibel is silent as to method of production of the shank outside margin.

Asano et al. teach in col. 1 lines 14-15 the use of a shank of a cam being machined. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the shank of Deibel to have been machined, as taught by Asano et al., in order to provide a means of creating the various diameter differences in the shank.

Examiner notes that the limitation of the shank outside margin being machined represents a method of making the shank. In section 2113 of the MPEP it is stated that the patentability of a product is not based on its method of production but on the product itself.

Re: claims 14, 26, and 42. Deibel shows in figure 4 the limitation wherein the s cam shank outside margin is spaced apart from an inside margin of the bushing.

Deibel does not specifically disclose a range of sizes of the space.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the space of Deibel to have been an amount between .001 and .010 inches since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Art Unit: 3683

5. Claims 12, 14, 25, 26, 27, 40, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morris et al. in view of Eksergian et al. and further in view of 4346535 to Asano et al.

Re: claims 12, 25, and 40. Morris et al., as modified, teach in figure 4 of Morris et al. the s cam shank outside margin having a certain outside diameter.

Morris et al., as modified, is silent as to method of production of the shank outside margin.

Asano et al. teach in col. 1 lines 14-15 the use of a shank of a cam being machined. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the shank of Morris et al., as modified, to have been machined, as taught by Asano et al., in order to provide a means of creating the various diameter differences in the shank.

Examiner notes that the limitation of the shank outside margin being machined represents a method of making the shank. In section 2113 of the MPEP it is stated that the patentability of a product is not based on its method of production but on the product itself.

Re: claims 14, 26, and 42. Morris et al., as modified teach in figure 4 of Morris et al. the limitation wherein the s cam shank outside margin is spaced apart from an inside margin of the bushing.

Morris et al., as modified, do not specifically disclose a range of sizes of the space.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the space of Morris et al., as modified, to have been an amount between .001 and .010 inches since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

6. Claims 8-10, 21-23, and 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6240806 to Morris et al. in view of US Patent 2382554 to Eksbergian et al. and further in view of US Patent 6450073 to Boyer et al.

Re: claims 8, 21, and 35. Morris et al., as modified, describe the invention substantially as set forth above, but does not include the limitation of the grease fitting intersecting a circumferential groove defined in the bushing holder inside margin.

Boyer et al. teach in figures 3 and 4 the use of a bushing holder 30 having a circumferential groove 38 defined in the bushing holder inside margin.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the inside margin of the bushing holder of Morris et al., as modified, to have included a circumferential groove, as taught by Boyer et al., in order to provide a means of directing lubricant flow into the inner portions of the bushing holder.

Re: claims 9, 10, 22, 23, 36, and 37. Morris et al., as modified, teach in figures 3 and 4 of Boyer et al. the limitation of a circumferential groove 38 intersecting at least one spiral groove 40 defined in the bushing holder inside margin.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the inside margin of the bushing holder of Morris et al., as modified, to have included at least one spiral groove intersecting a circumferential groove, as taught by Boyer et al., in order to provide a means of directing lubricant flow into the inner portions of the bushing holder.

Response to Arguments

7. Applicant's arguments filed 12/30/05 have been fully considered but they are not persuasive.

With regards to the Deibel reference, Applicant argues that Deibel fails to teach or suggest a bushing wherein the bushing is substantially coextensive with an S cam shank and extends from proximate the S-head to proximate the splines. Examiner notes that "proximate" is a relative term and maintains that the left end of the bushing is proximate the S-head compared to the splines, for example, and the other end of the bushing is proximate or near the splines compared to the S-head.

With regards to the Morris in view of Eksergian rejection, Applicant argues that the combination would negate the effectiveness of the Morris tube. The combination of Morris and Eksergian does not include the actual physical incorporation of the bearing arrangement of Eksergian into Morris, but instead the incorporation of the teaching in Eksergian of replacing two spaced apart bearings with a single elongated bearing. It is maintained that one of ordinary skill in the art would know to position the fitting accordingly (for example, before or after the tube) to enable effective distribution of lubricant within the system in the presence of a single elongated tube.

Accordingly, the rejections have been maintained.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melody M. Burch whose telephone number is 571-272-7114. The examiner can normally be reached on Monday-Friday (6:30 AM-3:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James McClellan can be reached on 571-272-6786. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3683

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mmb
March 20, 2006

Melody M. Burch
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Primary Examiner
Art Unit 3683

3/20/06